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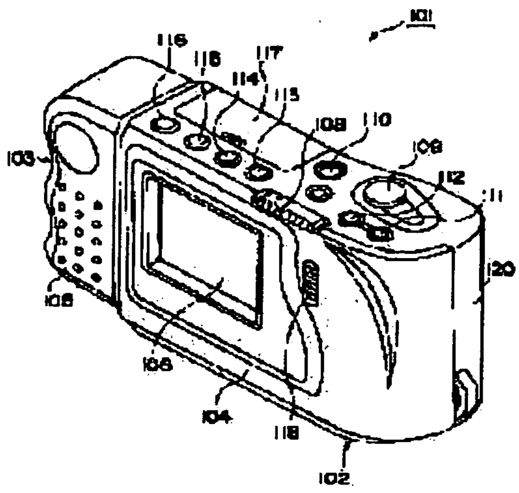
(54) ELECTRONIC STILL CAMERA

(57)Abstract:

PURPOSE: To allow the user to delete an image even at a visiting place while simply confirming the image and to surely prevent accidental erasure of a required image by providing an operation key to a same case as that for a display section.

CONSTITUTION: An image pickup section, a storage means storing image data picked up by the image pickup section and a display section displaying image based on the image data stored in the storage means are integrated and an operation section of a key means provided to a same case as that of the display section is used to select an image to be displayed on the display section. That is, a still camera 101 with LCD is made up of two blocks being a main body section 102 and a camera section 103 and an LCD 106 is provided in a case 104 of the main body section 102. When an image having been picked up is erased, a key means provided to the same case is operated to display selectively a reproduced image on the LCD 106 integrated to the camera 101 and to find out an image desired to be erased and the erasure is executed while confirming the displayed image.



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CLAIMS

[Claim(s)]
[Claim 1] The image pick-up section and a storage means to memorize the image data picturized by this image pick-up section, By actuation of the key means which is the electronic "still" camera equipped with the display which displays the image based on the image data memorized by this storage means in one, and was formed in the same case as said display By actuation of the selection means which can choose the image which should be displayed on said display, and can move the page of a display image forward and backward, and the key means formed in the same case as said display By actuation of the 1st elimination means which eliminates 1 page of image data memorized by said storage means equivalent to the image which is chosen by said selection means and displayed on said display, and the key means formed in the same case as said display The electronic "still" camera characterized by enabling elimination of an image and data, checking an image to eliminate by having the 2nd elimination means which carries out all page elimination of the image data memorized by said storage means, and operating the key means formed in the same case as said display.
[Claim 2] The image pick-up section and a storage means to memorize the image data picturized by this image pick-up section, By actuation of the key means which is the electronic "still" camera equipped with the display which displays the image based on the image data memorized by this storage means in one, and was formed in the same case as said display By actuation of the selection means which can choose the image which should be displayed on said display, and can move the page of a display image forward and backward, and the key means formed in the same case as said display It has an elimination protection setting means to set up turning on and off of the elimination protector of the image data memorized by said storage means equivalent to the image which is chosen by said selection means and displayed on said display. The electronic "still" camera characterized by enabling an on-off setup of elimination protection of image data, checking an image to carry out elimination protection by operating the key means formed in the same case as said display.
[Claim 3] A storage means to memorize the photoed image data, and the display which displays the image based on the image data memorized by this storage means, A selection means to choose the image which should be displayed on this display, and an elimination protection setting means to set up turning on and off of elimination protection to the image data of said storage means equivalent to the image chosen by this selection means, The electronic "still" camera characterized by providing a display selection means to choose whether it displays with the image displayed on said display by making into incidental information the condition of turning on and off of the elimination protection set up by this elimination protection setting means.
[Claim 4] The electronic "still" camera according to claim 3 characterized by providing an incidental information elimination means to eliminate this incidental information after predetermined time progress by selection that said incidental information by said display selection means is not displayed.
[Claim 5] A storage means to memorize the photoed image data, and the display which displays the image based on the image data memorized by this storage means, A selection means to choose the image which should be displayed on this display, and an elimination protection setting means to set up turning on and off of elimination protection to the image data of said storage means equivalent to the image chosen by this selection means, The electronic "still" camera characterized by providing the skip activation means to which the display by said display is made to skip to the image to which elimination

protection-on was set by this elimination protection setting means.
[Claim 6] The electronic "still" camera characterized by to provide the means which carries out sequential playback of the storage image while skipping the image with which elimination protection was set [in the image which two or more sheet regeneration is possible, and memorized the picturized image] up in the electronic "still" camera in which an elimination protection setup in an one-sheet unit is [that elimination is possible and] possible at the time of washout mode in the one-sheet unit, and a means eliminate the reproduced image.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Industrial Application] This invention relates to the electronic "still" camera which records a static image on a record medium.
[0002]
[Description of the Prior Art] Recently, the optical static image caught with the lens is changed into an electrical signal by CCD, and the electronic "still" camera which recorded this on record media, such as semiconductor memory and a floppy disk, is put in practical use.
[0003] A deer is carried out and the number of sheets which can be photoed and recorded by large-capacity-izing of a record medium or advance of image compression technology has been increasing sharply in such an electronic "still" camera. Therefore, if a photograph is taken in large quantities for the time being on the way and an unnecessary image is eliminated serially, the usage of taking a photograph further is considered.
[0004]
[Problem(s) to be Solved by the Invention] However, in the conventional electronic "still" camera, monitor connection also of the exterior had to be carried out, the activity of eliminating since an image is reproduced had to be done, and it was very troublesome. Moreover, since troublesome actuation was performed, the need may have eliminated the image.
[0005] This invention aims at offering an electronic "still" camera with legible screen-display mode while a destination also checks an image simply by having been made in view of the above-mentioned situation, and preparing an actuation key in the same case as a display, and it can perform elimination actuation and can prevent incorrect elimination of a required image certainly.
[0006]
[Means for Solving the Problem] A storage means by which invention according to claim 1 memorizes the image data by which it was picturized by the image pick-up section and this image pick-up section, By actuation of the key means which is the electronic "still" camera equipped with the display which displays the image based on the image data memorized by this storage means in one, and was formed in the same case as said display By actuation of the selection means which can choose the image which should be displayed on said display, and can move the page of a display image forward and backward, and the key means formed in the same case as said display By actuation of the 1st elimination means which eliminates 1 page of image data memorized by said storage means equivalent to the image which is chosen by said selection means and displayed on said display, and the key means formed in the same case as said display Elimination of an image and data is enabled by having the 2nd elimination means which carries out all page elimination of the image data memorized by said storage means, and operating the key means formed in the same case as said display, checking an image eliminating.
[0007] A storage means by which invention according to claim 2 memorizes the image data by which it was picturized by the image pick-up section and this image pick-up section, By actuation of the key means which is the electronic "still" camera equipped with the display which displays the image based on the image data memorized by this storage means in one, and was formed in the same case as said display By actuation of the selection means which can choose the image which should be displayed on said display, and can move the page of a display image forward and backward, and the key means formed

in the same case as said display It has an elimination protection setting means to set up turning on and off of the elimination protector of the image data memorized by said storage means equivalent to the image which is chosen by said selection means and displayed on said display. By operating the key means formed in the same case as said display, an on-off setup of elimination protection of image data is enabled, checking an image carrying out elimination protection.

[0008] A storage means to memorize the image data by which invention according to claim 3 was photoed, The display which displays the image based on the image data memorized by this storage means, A selection means to choose the image which should be displayed on this display, and an elimination protection setting means to set up turning on and off of elimination protection to the image data of said storage means equivalent to the image chosen by this selection means, It is constituted by display selection means to choose whether it displays with the image displayed on said display by making into incidental information the condition of turning on and off of the elimination protection set up by this elimination protection setting means.

[0009] Invention according to claim 4 possesses an incidental information elimination means to eliminate this incidental information after predetermined time progress by selection that said incidental information by said display selection means is not displayed.

[0010] A storage means to memorize the image data by which invention according to claim 5 was photoed, The display which displays the image based on the image data memorized by this storage means, A selection means to choose the image which should be displayed on this display, and an elimination protection setting means to set up turning on and off of elimination protection to the image data of said storage means equivalent to the image chosen by this selection means, It is constituted by the skip activation means to which the display by said display is made to skip to the image to which elimination protection-on was set by this elimination protection setting means.

[0011] Invention according to claim 6 possesses the means which carries out sequential playback of the storage image while skipping the image with which elimination protection was set [in the image which two or more sheet regeneration is possible, and memorized the picturized image] up in the electronic "still" camera in which an elimination protection setup in an one-sheet unit is [that elimination is possible and] possible at the time of washout mode in the one-sheet unit, and a means to eliminate the reproduced image.

[0012]

[Function] Consequently, a storage means to memorize the image data which was picturized by the image pick-up section and this image pick-up section according to invention according to claim 1, The display which displays the image based on the image data memorized by this storage means is made in one. Choose the image which should be displayed on a display by actuation of the key means formed in the same case as a display, and the page of a display image is made movable forward and backward. Page elimination can be performed finding out an image [displaying a playback image on a display alternatively by enabling 1 page or all page elimination of the image data of the storage means equivalent to this selected image] eliminating, and checking this.

[0013] A storage means to memorize the image data which was picturized by the image pick-up section and this image pick-up section according to invention according to claim 2, The display which displays the image based on the image data memorized by this storage means is made in one. Choose the image which should be displayed on a display by actuation of the key means formed in the same case as a display, and the page of a display image is made movable forward and backward. Since turning on and off of the elimination protector of the image data memorized by said storage means equivalent to the image currently displayed on this selected display can be set up, turning on and off of elimination protection can be set up in an one-sheet unit to a storage image, and incorrect elimination of an important image can be prevented.

[0014] According to invention according to claim 3, it has the display which displays the image based on the image data memorized by the storage means. While enabling a setup of turning on and off of elimination protection with an elimination protection setting means to the image data of the storage means which chooses the image which should be displayed on a display with a selection means, and is equivalent to this selected image Since he is trying to choose whether it displays with the image displayed on a display by making the condition of this turning on and off of the elimination protection set up into incidental information with a display selection means When you do not need presenting of

incidental information, it can eliminate easily from the display screen by a user's intention.
[0015] since he is trying to eliminate this incidental information with an incidental information elimination means after predetermined time progress when according to invention according to claim 4 incidental information was not displayed with a display selection means and it is chosen, also when not displaying incidental information, the on-off condition of elimination protection can be boiled once, and can be checked.
[0016] According to invention according to claim 5, it has the display which displays the image based on the image data memorized by the storage means. While setting up turning on and off of elimination protection with an elimination protection setting means to the image data of the storage means which chooses the image which should be displayed on a display with a selection means, and is equivalent to this selected image Since he is trying to make the display by the account display skip with a skip activation means to the image with which elimination protection-on was set up, on the occasion of the image selection at the time of page elimination, elimination protection can skip this automatically to the image set as ON.
[0017] And according to invention according to claim 6, at the time of washout mode, sequential playback of the storage image is carried out skipping the image with which elimination protection was set up, and an image can be eliminated to this reproduced arbitration.
[0018]
[Example] Hereafter, the example of this invention is explained according to a drawing.
(The 1st example) It enables it to eliminate in the 1st example, displaying one recorded image at a time on LCD, and checking it.
[0019] Drawing 1 thru/or 5 show the appearance of the electronic "still" camera concerning this invention. In this case, drawing 1 shows a digital still camera with LCD as an example of an electronic "still" camera, and, as for that front view, drawing 3 (a), and (b), drawing 2 shows the top view and the bottom view.
[0020] As shown in drawing, the digital still camera 101 with LCD consists of two blocks divided into the body section 102 and the camera section 103. And LCD106 is formed in the case 104 of the body section 102, and this LCD106 is turned to the rear-face side of a case 104.
[0021] Moreover, the image pick-up lens 107 is formed in the upper part within the case 105 of the camera section 103, and this image pick-up lens 107 is turned to the front-face side of a case 105.
[0022] Moreover, the body section 102 is equipped with the external power terminal which is not illustrated in the closing motion lid 117, the video outlet terminal, the digital terminal, etc. while it equips the top face of a case 104 with an electric power switch 108, a shutter release 109, Delete key 110, Pulaski 111, the minus key 112, the mode key 113, the display key 114, the zoom key 115, and the self-timer key 116.
[0023] Furthermore, the front face of a case 104 was equipped with the function change key 118, and the inferior surface of tongue of a case 104 is equipped with the hole 119 for tripods. The case 104 of the above body section 102 serves as the grip section 120 by the grip configuration section made into the bulge configuration so that it may be easy to grasp the right-hand actuation side by the photography person by hand, and the closing motion-type cell lid 121 is formed in the inferior surface of tongue corresponding to this grip section 120. Moreover, said shutter release 109 is located in the top face of this grip section 120.
[0024] Moreover, the camera section 103 equips the side face of a case 105 with the focus changeover switch 122. And this camera section 103 is arranged to the body section 102 on the side face by the side of the left-hand actuation by the photography person, and as shown in drawing 4 and drawing 5 R> 5, it is ahead attached pivotable to the body section 102 by 90 degrees and 180 degrees of back.
[0025] Drawing 6 shows the circuitry of such an electronic "still" camera. 1 is CCD and he is trying for this CCD1 to change into an electrical signal the quiescence image which carried out image formation through the lens which is not illustrated in drawing.
[0026] And after giving the electrical signal from this CCD1 to a buffer 2 and amplifying on predetermined level here, the A/D-conversion section 3 is supplied. The A/D-conversion section 3 changes a quiescence video signal into digital data (a video signal is called hereafter.), and supplies this video signal to TG (Timing Generater)4.
[0027] While TG4 generates the timing signal for controlling the drive circuit 4 which drives CCD1 and

supplies this timing signal to the drive circuit 5, he is trying to incorporate a video signal according to this timing signal.
[0028] DRAM (dynamic memory)6, compression/expanding section 7, and a flash memory (image memory) 8 are connected to TG4. DRAM6 is a storage which stores temporarily the video signal incorporated according to the timing signal of TG4. Moreover, in DRAM6, color data processing from which a video signal is read when photography for one screen is completed, and it separates a luminance signal and a chrominance signal is performed by control of CPU9 mentioned later.
[0029] While compression/expanding section 7 compresses the luminance signal and chrominance signal which were separated by color data processing with compression methods, such as for example, a JPEG (Joint Photographic Coding Experts Group) method, it is made to perform processing which elongates the compressed compression video signal. And a flash memory 8 stores the compressed video signal (a luminance signal and chrominance signal).
[0030] On the other hand, 9 is CPU and has connected the key input section 10, and ROM11, RAM12 and SG (Sinal Generater: video signal generator)13 other than above-mentioned TC4 and DRAM6, compression/expanding section 7, and a flash memory 8 to this CPU9.
[0031] CPU9 controls actuation of each part according to the condition of the program in ROM11, and the switch of the key input section 10. The key input section 10 consists of switches which set up a mode of operation (an image incorporation key and playback key) and the various set points, and the condition in this key input section 10 is incorporated by CPU9. RAM12 is used as working area of CPU9. Moreover, SG13 superimposes a chrominance signal on the luminance signal elongated by compression/expanding section 7, adds a synchronizing signal, and creates a digital video signal.
[0032] VRAM (Video RAM)14 and D/A converter 15 were connected to SG13, and an output terminal 17 and LCD (liquid crystal display)18 are connected to D/A converter 15 through a buffer 16.
[0033] VRAM14 is a storage which memorizes a digital video signal. Moreover, while D/A converter 15 changes into an analog signal (an analog video signal is called hereafter.) the digital video signal which SG13 outputs and outputs it from an output terminal 17 through a buffer 16, he is trying to supply it to LCD18. LCD18 displays an image according to the analog video signal supplied through a buffer 16.
[0034] Serial I/O20 is connected to CPU9 through I/O Port 19. This I/O Port 19 functions as an interface which outputs and inputs the video signal changed into the serial signal.
[0035] A deer is carried out, and in the electronic "still" camera constituted in this way, if washout mode is set up by the key input section 10, the flow chart shown in drawing 7 will be performed. In this case, when washout mode is set up by the key input section 10 from the condition which shows the usual playback image to LCD18, as are shown in [a] drawing 9 , and it is shown in [b] drawing 9 , a menu indication of page elimination "PAGE DEL", all elimination "ALL DEL", and the mode discharge "EXIT" is given, and it is urged to one directions of these menus.
[0036] Here, if page elimination is directed, it will be judged as YES at step 201, and will progress to step 202, and page elimination will be displayed. As the display by LCD18 in this case is shown in drawing 8 which expanded the inside c of drawing 9 , each menu of activation "YES", discharge "EXIT", and +/- selection "SELECT" is displayed with the display of the purport of page elimination.
[0037] Here, if it is judged as YES at step 203, and it progresses to step 204, if the "+" key is operated, and the playback image of degree page is displayed and the "-" key is operated, it will be judged as YES at step 205, and will progress to step 206, and the playback screen of the last page will come to be displayed.
[0038] Thus, if the "+" key or the "-" key is operated, a playback image as shown in [d] drawing 9 on LCD18 will be displayed in order, and an image [looking at this] to eliminate will be chosen. And if an Enter key is operated after finding and checking an image to eliminate on LCD18, it will be judged as YES at step 207, and an applicable page will be eliminated at step 208, and as shown in [e] drawing 9 , the image of degree page of an elimination page will come to be expressed as step 209 on LCD18.
[0039] Here, if a discharge key is operated when an image to eliminate is not found, at step 210, it will be judged as YES, and washout mode is canceled, and it will be step 211 and it will return to the normal mode shown in [a] drawing 9 .
[0040] When the check of all elimination is made on LCD18 as it is shown in [f] drawing 9 on the other hand, when all elimination "ALL DEL" is directed from the display screen shown in [b] drawing 9 , and "YES" is directed here, at step 212 It is judged as YES, and progresses to step 213, and elimination of

all pages is performed, as shown in [g] drawing 9 , "NO MEMORY" is displayed on LCD18, and it returns to the normal mode of step 211.

[0041] Moreover, if washout mode discharge "EXIT" is directed from the display screen shown in [b] drawing 9 , at step 214, it will be judged as YES and will return to the normal mode shown in [a] drawing 9 by step 211.

[0042] Therefore, displaying a playback image alternatively on LCD18 included in one, when eliminating the image taken a photograph according to such 1st example Since elimination can be performed finding out an image eliminating and checking this It simplifies, even when an external monitor is prepared like before and an external monitor cannot prepare by use of about [not needing troublesome time and effort of connecting an external monitor compared with what connected this], the outdoors, etc. And page elimination while checking an elimination screen certainly is realizable. Moreover, good operability is also realizable from the ability of page elimination for which it asks only by the key stroke in the key input section 10 according to various kinds of directions on the screen of LCD18 to be obtained.

(The 2nd example) The 2nd example enables it to apply an elimination protector for every sheet of a record image.

[0043] In this case, about the outline configuration of an electronic "still" camera, it shall be the same as that of drawing 6 mentioned above, and this drawing shall be used here. In addition, the flash memory 8 here has the header data 81 and 82 corresponding to each page image, and --8n as a header table, as shown in drawing 10 , and it has memorized memory address 8a and elimination protection flag 8b the image data which corresponds, respectively is remembered to be these header data 81 and 82 and --8n.

[0044] And in the protection ON to which elimination protection is applied, in the electronic "still" camera constituted in this way, the image for which it asks while looking at the image displayed on LCD18 is chosen first. And if a protection key is operated from the key input section 10, the flow chart shown in drawing 11 (a) will be performed in the place in which the corresponding image was found.

[0045] In this case, the header data 81 and 82 of the header table memorized by the flash memory 8 and --8n are read on DRAM6 at step 601. And the header of the image data currently displayed on current [LCD / 18] is searched at step 602. For example, the thing as which the page [1st] image data is displayed on LCD18, then the header data 81 will be searched.

[0046] And the elimination protection flag in the header data which progressed to step 603 and were searched is set, at step 604, the header table of a flash memory 8 is eliminated, it progresses to step 605, the header table on DRAM6 is returned to a flash memory 8, and processing is ended.

[0047] In this case, in the image data in the protection-on condition to which elimination protection was able to be applied, in the case of the page [8th] image data, as shown in drawing 12 (b), presenting of the incidental information on "8P" is made in a top-right-of-the-screen corner, for example.

[0048] On the other hand, in the protection OFF which removes elimination protection, the image for which it asks while looking at the image displayed on LCD18 is chosen. And if a protection discharge key is operated from the key input section 10, the flow chart shown in drawing 11 (b) will be performed in the place in which the corresponding image was found.

[0049] In this case, the header data 81 and 82 of the header table memorized by the flash memory 8 and --8n are read on DRAM6 at step 606. And the header of the image data currently displayed on current [LCD / 18] is searched at step 607. For example, the thing as which the page [1st] image data is displayed on LCD18, then the header data 81 will be searched.

[0050] And the elimination protection flag in the header data which progressed to step 608 and were searched is taken down, at step 604, the header table of a flash memory 8 is eliminated, it progresses to step 605, the header table on DRAM6 is returned to a flash memory 8, and processing is ended.

[0051] In this case, in the image data in the protection-off condition that elimination protection was removed, in the case of the page [8th] image data, as shown in drawing 12 (a), presenting of the usual incidental information on "8" is made in a top-right-of-the-screen corner, for example.

[0052] Therefore, according to such 2nd example, since ON/OFF of elimination protection can be set up in an one-sheet unit to a record image, what eliminates accidentally by setting it as the elimination protection ON about important image data can be prevented certainly.

(The 3rd example) In the 3rd example, also when it makes it selectable whether to display incidental information, such as the page number of an image, and elimination protection information, together with a playback image, or not to carry out and elimination protection processing is further performed in the

state of the incidental information display OFF, a user enables distinction of ON/OFF of elimination protection easily.
[0053] Also in this case, about the outline configuration of an electronic "still" camera, it shall be the same as that of drawing 6 mentioned above, and this drawing shall be used here. In addition, also about the flash memory 8 here, as shown in drawing 10 , it should have the header data 81 and 82 corresponding to each page image, and --8n as a header table, and memory address 8a and elimination protection flag 8b the image data which corresponds, respectively is remembered to be shall be memorized these header data 81 and 82 and --8n.
[0054] And the image for which it asks while looking at the image which is displayed on LCD18 in the protection ON to which elimination protection is first applied in the electronic "still" camera constituted in this way is chosen, and if a protection key is operated from the key input section 10, the flow chart shown in drawing 13 (a) will be performed in the place in which the applicable image was found.
[0055] In this case, elimination protection processing of the image memory concerned is performed at step 801. Elimination protection processing here is the same as drawing 11 (a) mentioned above explained.
[0056] Subsequently, it is urged to directions of whether to turn ON presenting of incidental information at step 802. Here, when Display ON is directed from the key input section 10, it progresses to step 803 and the page number and "P" are displayed as incidental information. Presenting of the incidental information on "8P" is made by the case where an applicable image is the 8th page by the inside a of drawing 14 in a screen upper right corner.
[0057] On the other hand, when Display OFF is directed from the key input section 10, it progresses to step 804 and the page number and "P" are first expressed as step 802 as incidental information. Presenting of the incidental information on "8P" is made by the case where an applicable image is the 8th page by the inside b of drawing 14 in a screen upper right corner. And after waiting for 1 second at step 805, it progresses to step 806 and the page number as incidental information and the display of "P" are erased. The condition that presenting of the incidental information on an applicable screen upper right corner was eliminated is shown by the inside c of drawing 14 .
[0058] Next, the image which also in the protection OFF which removes elimination protection wants while looking at the image displayed on LCD18 is chosen, and if a protection key is operated from the key input section 10, the flow chart shown in drawing 13 (b) will be performed in the place in which the applicable image was found.
[0059] In this case, elimination protection processing of the image memory concerned is performed at step 807. Elimination protection processing here is the same as drawing 11 (b) mentioned above explained.
[0060] Subsequently, it is urged to directions of whether to turn ON presenting of incidental information at step 808. Here, when Display ON is directed from the key input section 10, it progresses to step 8091 and only the page number is displayed as incidental information. Presenting of the incidental information on "8" is made by the case where an applicable image is the 8th page by the inside d of drawing 14 in a screen upper right corner.
[0061] On the other hand, when Display OFF is directed from the key input section 10, it progresses to step 809 and only the page number is first expressed as step 808 as incidental information. Presenting of the incidental information on "8" is made by the case where an applicable image is the 8th page by the inside e of drawing 14 in a screen upper right corner. And after waiting for 1 second at step 810, it progresses to step 811 and the display of the page number as incidental information is erased. The condition that presenting of the incidental information on an applicable top-right-of-the-screen corner was eliminated is shown by the inside c of drawing 1414 .
[0062] Therefore, according to such 3rd example, when you do not need presenting of incidental information since it can choose [this] whether it displays with the display image of LCD18 by making the ON/OFF condition of the elimination protection set up into incidental information while being able to set up ON/OFF of elimination protection in an one - sheet unit to a record image, it can eliminate easily from LCD18 screen by a user's intention. and since he is trying to eliminate this incidental information after predetermined time progress when not displaying incidental information, also when not displaying incidental information, the ON/OFF condition of elimination protection can be boiled once and can be checked.

(The 4th example) In the 4th example, page elimination in case the image which has required elimination protection into the record image exists is realized.
[0063] In this case, about the outline configuration of an electronic "still" camera, it shall be the same as that of drawing 6 mentioned above, and this drawing shall be used here. In this case, the key input section's 10 setup of washout mode performs the flow chart shown in drawing 15 .
[0064] First, from the condition which shows the usual playback image, if washout mode is set up by the key input section 10, page elimination will be expressed as step 1001. As the display by LCD18 in this case is shown in drawing 8 mentioned above, each menu of activation "YES", discharge "EXIT", and +/- selection "SELECT" is displayed with the display of the purport of page elimination.
[0065] Here, if the "+" key is operated, it is judged as YES at step 1002, and it progresses to step 1003 and judges whether ON condition has elimination protection of degree page. In this case, if it becomes NO, it will progress to step 1004 and the playback image of degree page will be displayed. Moreover, if it becomes YES, at step 1005, degree page will be skipped and it will judge [return and] whether ON condition has elimination protection of degree page further to step 1003. In this case, if it becomes NO, it will progress to step 1004 and the playback image of degree page will come to be displayed.
[0066] On the other hand, if the "-" key is operated, it will be judged as YES at step 1006, will progress to step 1007, and will judge whether ON condition has elimination protection of the last page. In this case, if it becomes NO, it will progress to step 1008 and the playback image of the last page will be displayed. Moreover, if it becomes YES, at step 1009, the last page will be skipped and it will judge [return and] whether ON condition has elimination protection of the last page further to step 1007. In this case, if it becomes NO, it will progress to step 1008 and the playback image of the last page will come to be displayed.
[0067] That is, while Images a, b, and c are recorded in order of drawing 16 in this case, when the thing which has required elimination protection for the 2nd image b, then the above-mentioned "+" key are operated Image selection as shown in this drawing (b) from drawing 17 (a) is performed, and conversely, when the above-mentioned "-" key is operated, image selection as shown in this drawing (a) from drawing 17 (b) will be performed.
[0068] And if an Enter key is operated after finding and checking an image to choose an image to eliminate and eliminate on LCD18 by actuation of such the "+" key or the "-" key, it will be judged as YES at step 1010, an applicable page will be eliminated at step 1011, and the image of degree page of an elimination page will come to be expressed as step 1012 on LCD18.
[0069] Here, if a discharge key is operated when an image to eliminate is not found, at step 1013, it will be judged as YES, and washout mode is canceled, it will be step 1014 and will return to the normal mode.

[0070] Therefore, since it enables it to display the image which skips this automatically and is not set as the elimination protection ON on LCD18 to the image set as the elimination protection ON on the occasion of the image selection at the time of page elimination according to such 4th example, efficient page elimination is realizable.
[0071] In addition, this invention is not limited only to the above-mentioned example, but in the range which does not change a summary, deforms suitably and can be carried out. Although an expression called an electronic "still" camera is used in this invention, it cannot be overemphasized that the picture input device of a computer etc. is included for example.
[0072]
[Effect of the Invention] Since elimination can be performed checking [as stated above, find out an image / displaying an image on ******** which it had in one alternatively according to this invention / to eliminate, and] this It simplifies, even when an external monitor is prepared like before and an external monitor cannot prepare by use of about [not needing troublesome time and effort of connecting an external monitor compared with what connected this], the outdoors, etc. And page elimination while checking an elimination screen certainly is realizable.
[0073] Moreover, what eliminates from the ability of turning on and off of elimination protection to be set up in an one-sheet unit to a storage image accidentally by setting it as the elimination protection ON about important image data can be prevented certainly.
[0074] furthermore, when you do not need presenting of incidental information, it can eliminate easily from the display screen by a user's intention, and moreover, even when not displaying incidental

information, the on-off condition of elimination protection can be boiled once, and can be checked.
[0075] Furthermore, on the occasion of the image selection at the time of page elimination, to the image set as ON, elimination protection is being able to skip this automatically and can realize efficient page elimination.

[Translation done.]

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TECHNICAL FIELD

[Industrial Application] This invention relates to the electronic "still" camera which records a static image on a record medium.

[Translation done.]

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PRIOR ART

[Description of the Prior Art] Recently, the optical static image caught with the lens is changed into an electrical signal by CCD, and the electronic "still" camera which recorded this on record media, such as semiconductor memory and a floppy disk, is put in practical use.
[0003] A deer is carried out and the number of sheets which can be photoed and recorded by large-capacity-izing of a record medium or advance of image compression technology has been increasing sharply in such an electronic "still" camera. Therefore, if a photograph is taken in large quantities for the time being on the way and an unnecessary image is eliminated serially, the usage of taking a photograph further is considered.

[Translation done.]

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EFFECT OF THE INVENTION

[Effect of the Invention] Since elimination can be performed checking [as stated above, find out an image / displaying an image on ******** which it had in one alternatively according to this invention / to eliminate, and] this It simplifies, even when an external monitor is prepared like before and an external monitor cannot prepare by use of about [not needing troublesome time and effort of connecting an external monitor compared with what connected this], the outdoors, etc. And page elimination while checking an elimination screen certainly is realizable.
[0073] Moreover, what eliminates from the ability of turning on and off of elimination protection to be set up in an one-sheet unit to a storage image accidentally by setting it as the elimination protection ON about important image data can be prevented certainly.
[0074] furthermore, when you do not need presenting of incidental information, it can eliminate easily from the display screen by a user's intention, and moreover, even when not displaying incidental information, the on-off condition of elimination protection can be boiled once, and can be checked.
[0075] Furthermore, on the occasion of the image selection at the time of page elimination, to the image set as ON, elimination protection is being able to skip this automatically and can realize efficient page elimination.

[Translation done.]

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] However, in the conventional electronic "still" camera, monitor connection also of the exterior had to be carried out, the activity of eliminating since an image is reproduced had to be done, and it was very troublesome. Moreover, since troublesome actuation was performed, the need may have eliminated the image.

[0005] This invention aims at offering an electronic "still" camera with legible screen-display mode while a destination also checks an image simply by having been made in view of the above-mentioned situation, and preparing an actuation key in the same case as a display, and it can perform elimination actuation and can prevent incorrect elimination of a required image certainly.

[Translation done.]

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MEANS

[Means for Solving the Problem] A storage means by which invention according to claim 1 memorizes the image data by which it was picturized by the image pick-up section and this image pick-up section, By actuation of the key means which is the electronic "still" camera equipped with the display which displays the image based on the image data memorized by this storage means in one, and was formed in the same case as said display By actuation of the selection means which can choose the image which should be displayed on said display, and can move the page of a display image forward and backward, and the key means formed in the same case as said display By actuation of the 1st elimination means which eliminates 1 page of image data memorized by said storage means equivalent to the image which is chosen by said selection means and displayed on said display, and the key means formed in the same case as said display Elimination of an image and data is enabled by having the 2nd elimination means which carries out all page elimination of the image data memorized by said storage means, and operating the key means formed in the same case as said display, checking an image eliminating.
[0007] A storage means by which invention according to claim 2 memorizes the image data by which it was picturized by the image pick-up section and this image pick-up section, By actuation of the key means which is the electronic "still" camera equipped with the display which displays the image based on the image data memorized by this storage means in one, and was formed in the same case as said display By actuation of the selection means which can choose the image which should be displayed on said display, and can move the page of a display image forward and backward, and the key means formed in the same case as said display It has an elimination protection setting means to set up turning on and off of the elimination protector of the image data memorized by said storage means equivalent to the image which is chosen by said selection means and displayed on said display. By operating the key means formed in the same case as said display, an on-off setup of elimination protection of image data is enabled, checking an image carrying out elimination protection.
[0008] A storage means to memorize the image data by which invention according to claim 3 was photoed, The display which displays the image based on the image data memorized by this storage means, A selection means to choose the image which should be displayed on this display, and an elimination protection setting means to set up turning on and off of elimination protection to the image data of said storage means equivalent to the image chosen by this selection means, It is constituted by display selection means to choose whether it displays with the image displayed on said display by making into incidental information the condition of turning on and off of the elimination protection set up by this elimination protection setting means.
[0009] Invention according to claim 4 possesses an incidental information elimination means to eliminate this incidental information after predetermined time progress by selection that said incidental information by said display selection means is not displayed.
[0010] A storage means to memorize the image data by which invention according to claim 5 was photoed, The display which displays the image based on the image data memorized by this storage means, A selection means to choose the image which should be displayed on this display, and an elimination protection setting means to set up turning on and off of elimination protection to the image data of said storage means equivalent to the image chosen by this selection means, It is constituted by the skip activation means to which the display by said display is made to skip to the image to which elimination protection-on was set by this elimination protection setting means.

[0011] Invention according to claim 6 possesses the means which carries out sequential playback of the storage image while skipping the image with which elimination protection was set [in the image which two or more sheet regeneration is possible, and memorized the picturized image] up in the electronic "still" camera in which an elimination protection setup in an one-sheet unit is [that elimination is possible and] possible at the time of washout mode in the one-sheet unit, and a means to eliminate the reproduced image.

[Translation done.]

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OPERATION

[Function] Consequently, a storage means to memorize the image data which was picturized by the image pick-up section and this image pick-up section according to invention according to claim 1, The display which displays the image based on the image data memorized by this storage means is made in one. Choose the image which should be displayed on a display by actuation of the key means formed in the same case as a display, and the page of a display image is made movable forward and backward. Page elimination can be performed finding out an image [displaying a playback image on a display alternatively by enabling 1 page or all page elimination of the image data of the storage means equivalent to this selected image] eliminating, and checking this.
[0013] A storage means to memorize the image data which was picturized by the image pick-up section and this image pick-up section according to invention according to claim 2, The display which displays the image based on the image data memorized by this storage means is made in one. Choose the image which should be displayed on a display by actuation of the key means formed in the same case as a display, and the page of a display image is made movable forward and backward. Since turning on and off of the elimination protector of the image data memorized by said storage means equivalent to the image currently displayed on this selected display can be set up, turning on and off of elimination protection can be set up in an one-sheet unit to a storage image, and incorrect elimination of an important image can be prevented.
[0014] According to invention according to claim 3, it has the display which displays the image based on the image data memorized by the storage means. While enabling a setup of turning on and off of elimination protection with an elimination protection setting means to the image data of the storage means which chooses the image which should be displayed on a display with a selection means, and is equivalent to this selected image Since he is trying to choose whether it displays with the image displayed on a display by making the condition of this turning on and off of the elimination protection set up into incidental information with a display selection means When you do not need presenting of incidental information, it can eliminate easily from the display screen by a user's intention.
[0015] since he is trying to eliminate this incidental information with an incidental information elimination means after predetermined time progress when according to invention according to claim 4 incidental information was not displayed with a display selection means and it is chosen, also when not displaying incidental information, the on-off condition of elimination protection can be boiled once, and can be checked.
[0016] According to invention according to claim 5, it has the display which displays the image based on the image data memorized by the storage means. While setting up turning on and off of elimination protection with an elimination protection setting means to the image data of the storage means which chooses the image which should be displayed on a display with a selection means, and is equivalent to this selected image Since he is trying to make the display by the account display skip with a skip activation means to the image with which elimination protection-on was set up, on the occasion of the image selection at the time of page elimination, elimination protection can skip this automatically to the image set as ON.
[0017] And according to invention according to claim 6, at the time of washout mode, sequential playback of the storage image is carried out skipping the image with which elimination protection was set up, and an image can be eliminated to this reproduced arbitration.

[Translation done.]

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EXAMPLE

[Example] Hereafter, the example of this invention is explained according to a drawing.

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] The perspective view showing the digital still camera with LCD of the 1st example of this invention.
[Drawing 2] The front view of the digital still camera with LCD of the 1st example.
[Drawing 3] The top view and bottom view of a digital still camera with LCD of the 1st example.
[Drawing 4] Rear view which looked at the body section from the LCD side where 90 degrees of camera sections of the digital still camera with LCD of the 1st example are rotated ahead.
[Drawing 5] The top view which looked at the body section from the top-face side where 90 degrees of camera sections of the digital still camera with LCD of the 1st example are rotated ahead.
[Drawing 6] Drawing showing the circuitry of the digital still camera with LCD of the 1st example.
[Drawing 7] The flow chart for explaining actuation of the 1st example.
[Drawing 8] Drawing showing the example of a display of the 1st example.
[Drawing 9] Drawing showing the example of display transition of the 1st example.
[Drawing 10] Drawing showing the header table of a flash memory used for the 2nd example of this invention.
[Drawing 11] The flow chart for explaining actuation of the 2nd example.
[Drawing 12] Drawing showing the example of a display of the 2nd example.
[Drawing 13] The flow chart for explaining actuation of the 3rd example of this invention.
[Drawing 14] Drawing showing the example of a display of the 3rd example.
[Drawing 15] The flow chart for explaining actuation of the 4th example of this invention.
[Drawing 16] Drawing showing the example of a display of the 4th example.
[Drawing 17] Drawing showing the example of a display of the 4th example.
[Description of Notations]
101 -- A digital still camera with LCD, 102 -- The body section, 103 -- Camera section, 104 [-- Image pick-up lens,] -- A case, 105 -- A case, 106 -- LCD, 107 108 -- An electric power switch, 109 -- A shutter release, 110 -- Delete key, 111 -- Pulaski, 112 -- A minus key, 113 -- Mode key, 114 -- A display key, 115 -- A zoom key, 116 -- Self-timer key, 117 -- A closing motion lid, 118 -- A function change key, 119 -- The hole for tripods, 120 [-- Buffer,] -- The grip section, 121 -- A cell lid, 1 -- CCD, 2 3 [-- DRAM, 7 / -- Compression/expanding section,] -- The A/D-conversion section, 4 -- TG, 5 -- A drive circuit, 6 8 [-- ROM, 12 / -- RAM, 13 / -- SG, 14 / -- VRAM, 15 / -- A D/A converter, 16 / -- A buffer, 17 / -- An output terminal, 18 / -- LCD, 19 / -- An I/O Port, 20 / -- Serial I/O.] -- A flash memory, 9 -- CPU, 10 -- The key input section, 11

[Translation done.]

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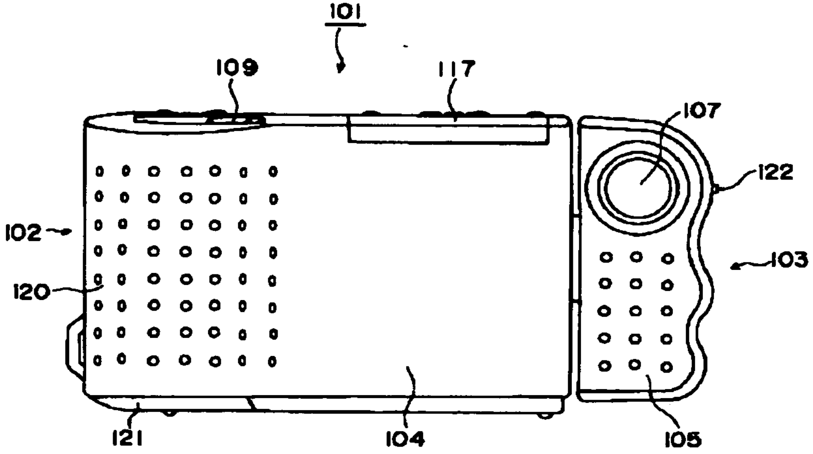
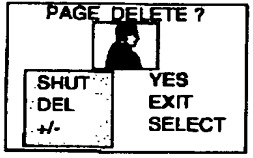
DRAWINGS

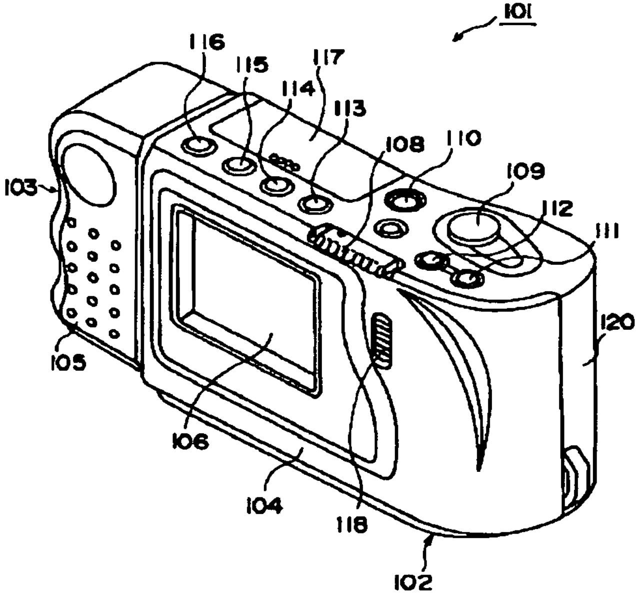
[Drawing 2]


101
109
117
107
122
102
103
120
121
104
105

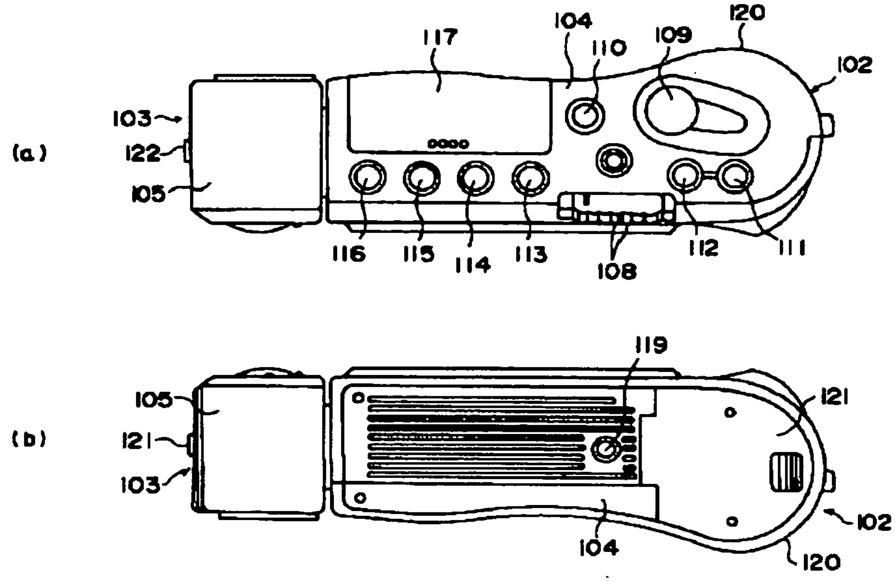
[Drawing 8]


PAGE DELETE ?
SHUT
DEL
+/-
YES
EXIT
SELECT

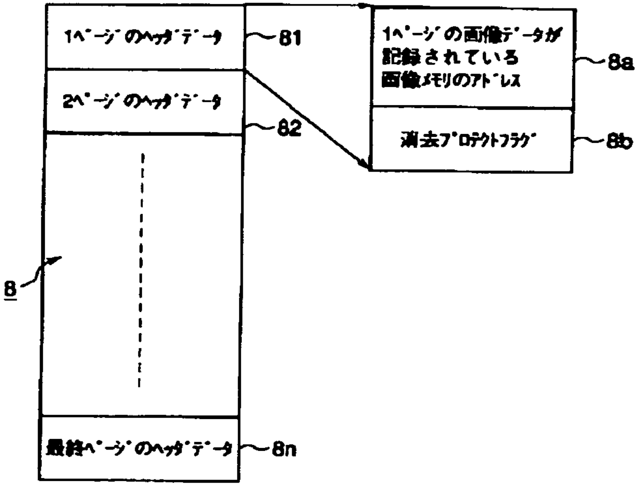
[Drawing 1]


101
116
115
117
114
113
108
110
109
112
111
103
120
105
106
104
118
102

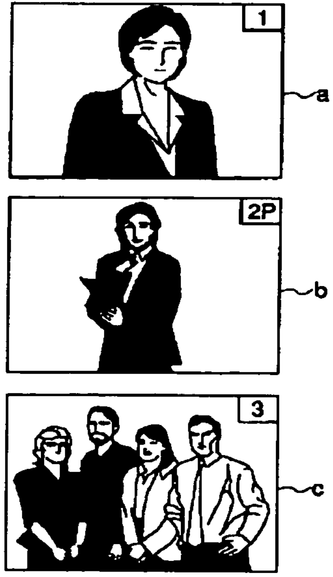
[Drawing 3]


(a)
103
122
105
117
104
110
109
120
102
116
115
114
113
108
112
111
(b)
105
121
103
119
121
102
104
120

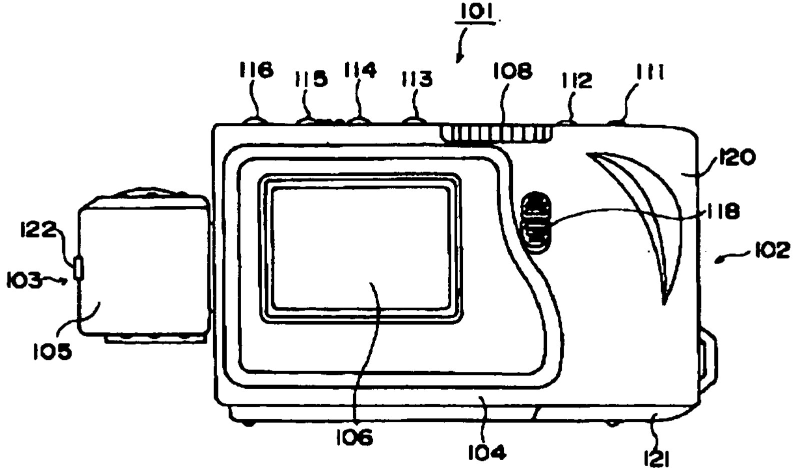
[Drawing 10]


1ﾍﾟｰｼﾞのﾍｯﾀﾞﾃﾞｰﾀ
81
2ﾍﾟｰｼﾞのﾍｯﾀﾞﾃﾞｰﾀ
82
1ﾍﾟｰｼﾞの画像ﾃﾞｰﾀが記録されている画像ﾒﾓﾘのｱﾄﾞﾚｽ
8a
消去ﾌﾟﾛﾃｸﾄﾌﾗｸﾞ
8b
8
最終ﾍﾟｰｼﾞのﾍｯﾀﾞﾃﾞｰﾀ
8n

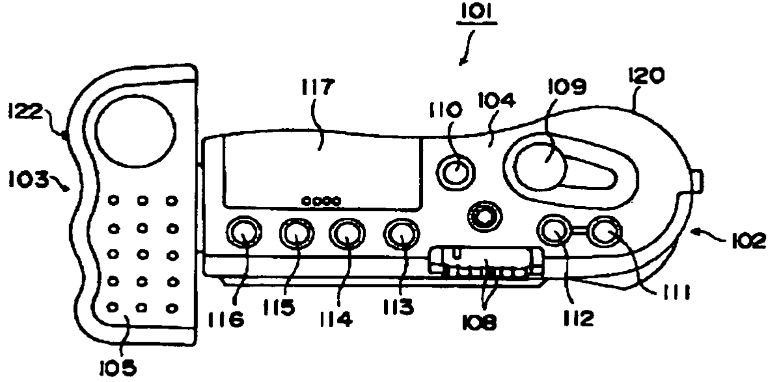
[Drawing 16]



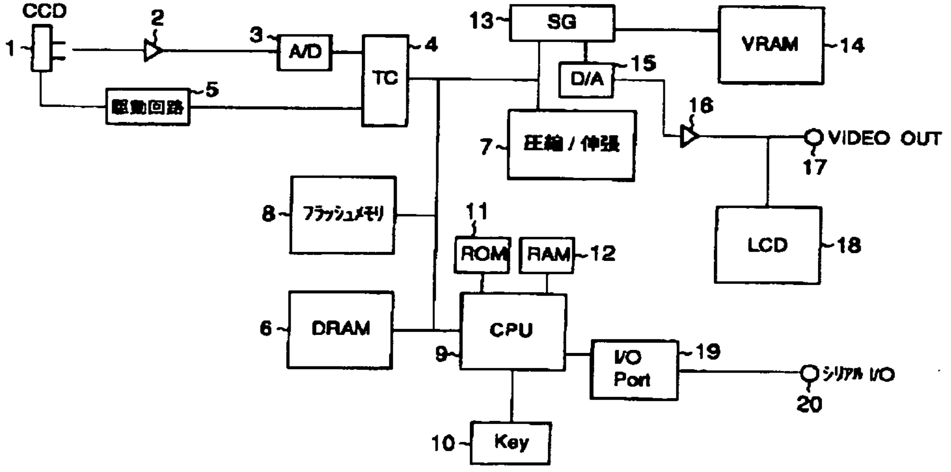
[Drawing 4]


101
116
115
114
113
108
112
111
120
118
122
103
102
105
106
104
121

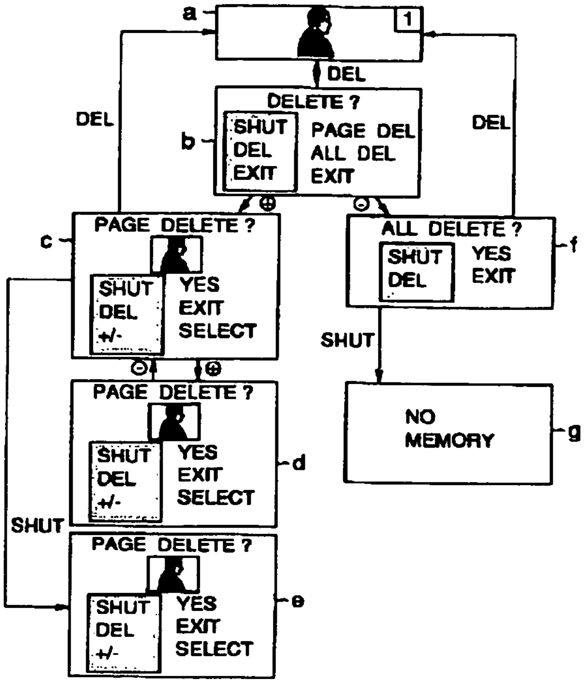
[Drawing 5]


101
117
110
104
109
120
122
103
102
116
115
114
113
108
112
111
105

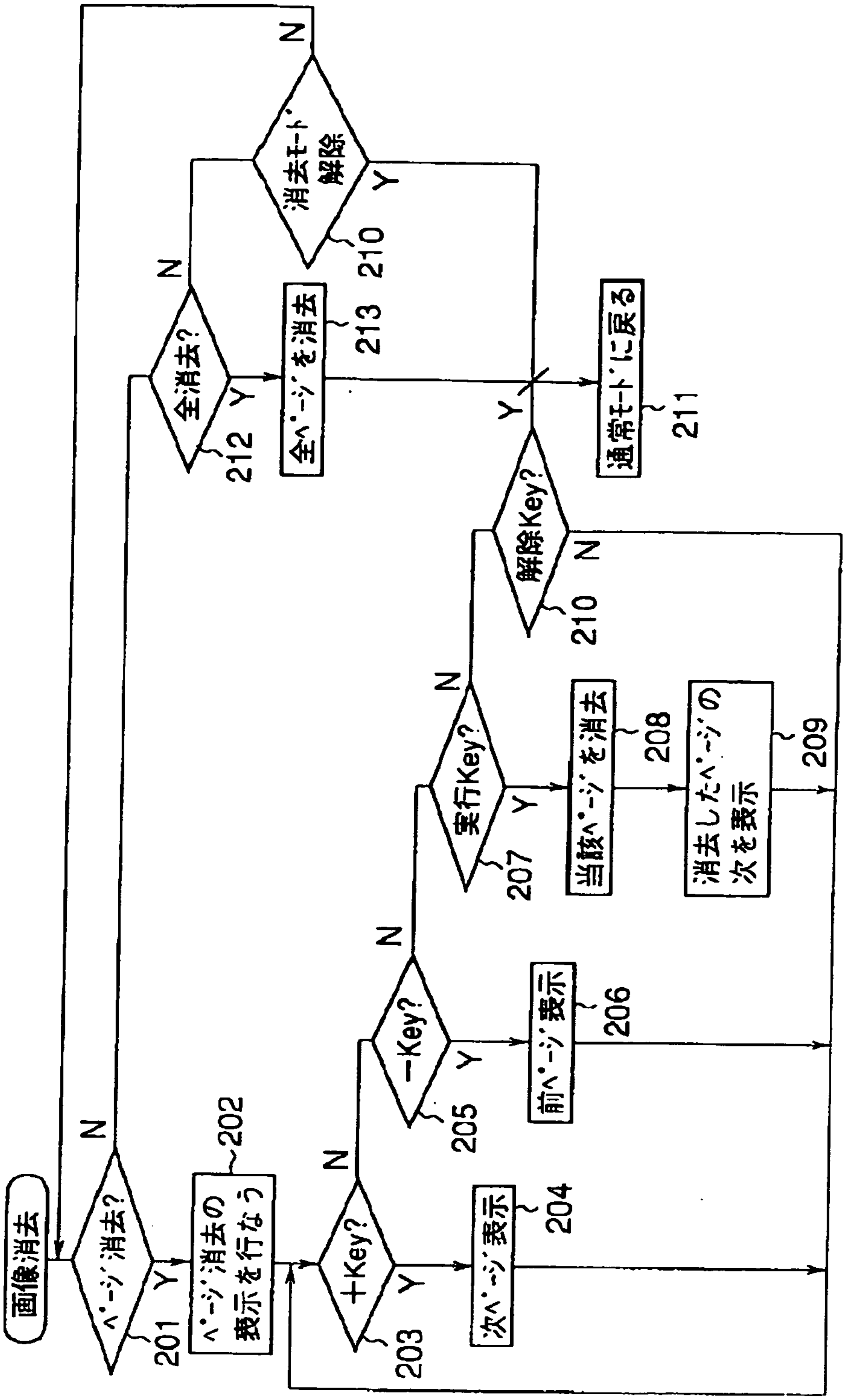
[Drawing 6]


CCD
1
2
3
A/D
TC
4
駆動回路
5
13
SG
VRAM
14
D/A
15
16
VIDEO OUT
17
圧縮 / 伸張
7
フラッシュメモリ
8
11
ROM
RAM
12
LCD
18
DRAM
6
CPU
9
I/O Port
19
シリアル I/O
20
Key
10

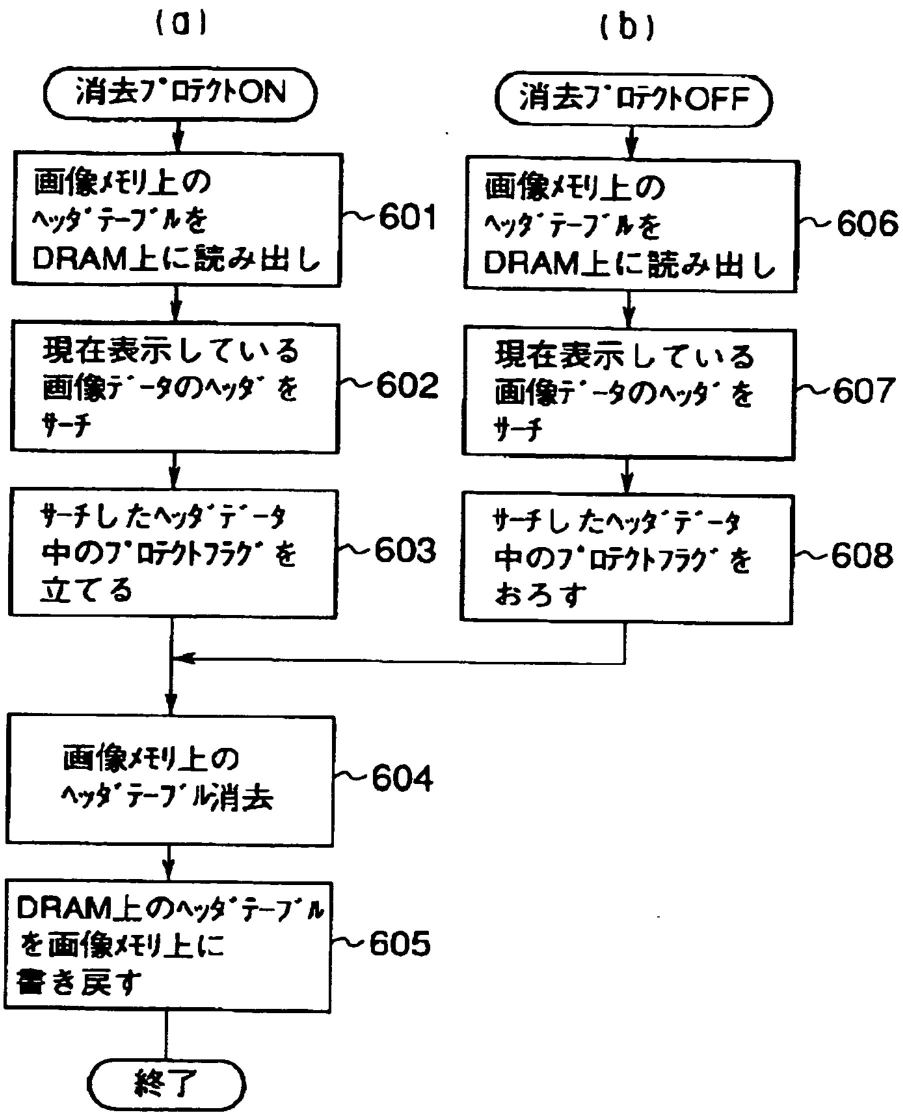
[Drawing 9]


a
1
DEL
DEL
DEL
DELETE ?
b
SHUT
DEL
EXIT
PAGE DEL
ALL DEL
EXIT
⊕
⊖
c
PAGE DELETE ?
SHUT
DEL
+/-
YES
EXIT
SELECT
ALL DELETE ?
f
SHUT
DEL
YES
EXIT
SHUT
⊖
⊕
PAGE DELETE ?
SHUT
DEL
+/-
YES
EXIT
SELECT
d
NO
MEMORY
g
SHUT
PAGE DELETE ?
SHUT
DEL
+/-
YES
EXIT
SELECT
e

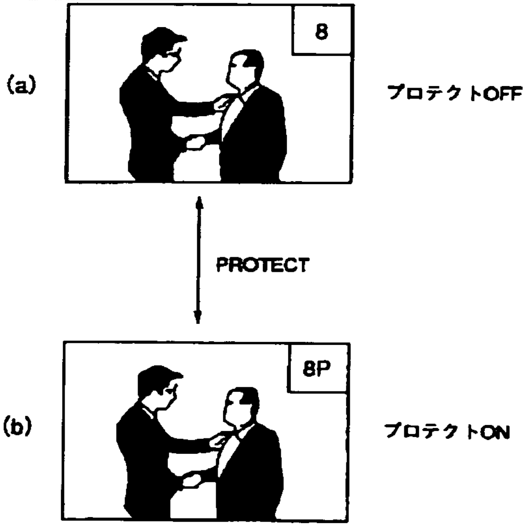
[Drawing 7]


画像消去
ページ消去?
201
Y
N
ページ消去の表示を行なう
202
+Key?
203
Y
N
次ページ表示
204
−Key?
205
Y
N
前ページ表示
206
実行Key?
207
Y
N
当該ページを消去
208
消去したページの次を表示
209
解除Key?
210
Y
N
通常モードに戻る
211
全消去?
212
Y
N
全ページを消去
213
消去モード解除
210
Y
N

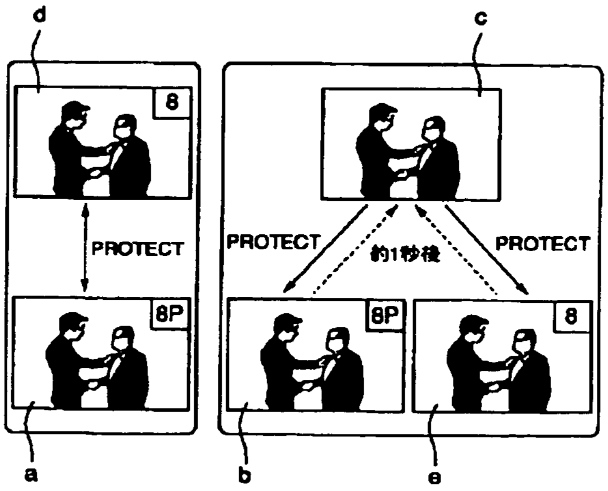
[Drawing 11]


(a)
(b)
消去ﾌﾟﾛﾃｸﾄON
消去ﾌﾟﾛﾃｸﾄOFF
画像ﾒﾓﾘ上の ﾍｯﾀﾞﾃｰﾌﾞﾙを DRAM上に読み出し
601
画像ﾒﾓﾘ上の ﾍｯﾀﾞﾃｰﾌﾞﾙを DRAM上に読み出し
606
現在表示している 画像ﾃﾞｰﾀのﾍｯﾀﾞを ｻｰﾁ
602
現在表示している 画像ﾃﾞｰﾀのﾍｯﾀﾞを ｻｰﾁ
607
ｻｰﾁしたﾍｯﾀﾞﾃﾞｰﾀ 中のﾌﾟﾛﾃｸﾄﾌﾗｸﾞを 立てる
603
ｻｰﾁしたﾍｯﾀﾞﾃﾞｰﾀ 中のﾌﾟﾛﾃｸﾄﾌﾗｸﾞを おろす
608
画像ﾒﾓﾘ上の ﾍｯﾀﾞﾃｰﾌﾞﾙ消去
604
DRAM上のﾍｯﾀﾞﾃｰﾌﾞﾙ を画像ﾒﾓﾘ上に 書き戻す
605
終了

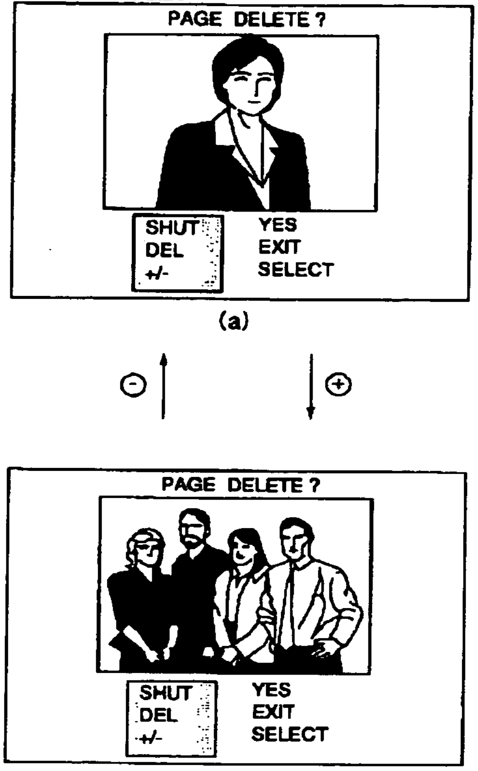
[Drawing 12]


(a)
8
ﾌﾟﾛﾃｸﾄOFF
PROTECT
(b)
8P
ﾌﾟﾛﾃｸﾄON

[Drawing 14]


d
c
8
PROTECT
PROTECT
約1秒後
PROTECT
8P
8P
8
a
b
e

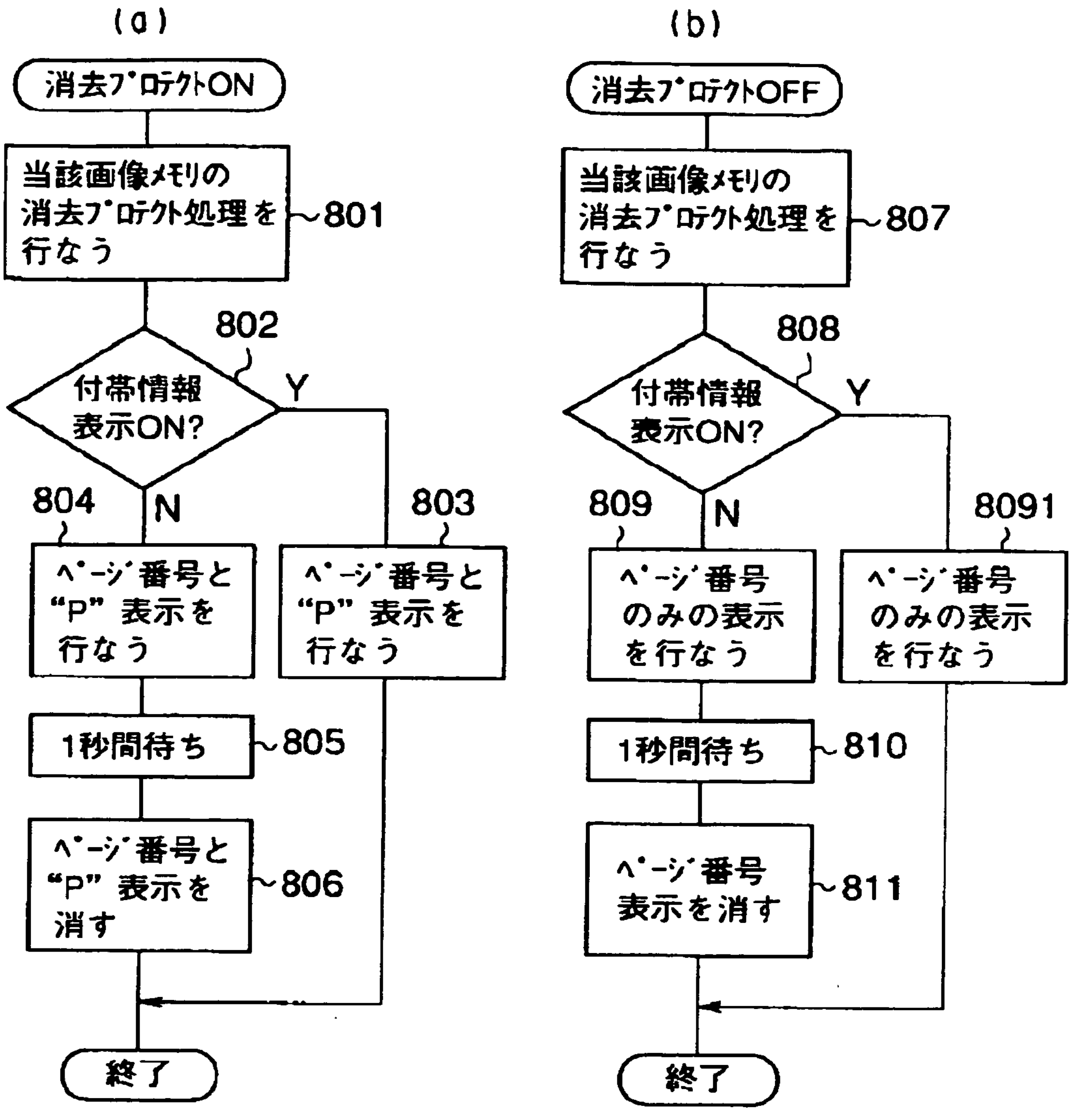
[Drawing 17]


PAGE DELETE ?
SHUT
DEL
+/-
YES
EXIT
SELECT
⊖
⊕
PAGE DELETE ?
SHUT
DEL
+/-
YES
EXIT
SELECT

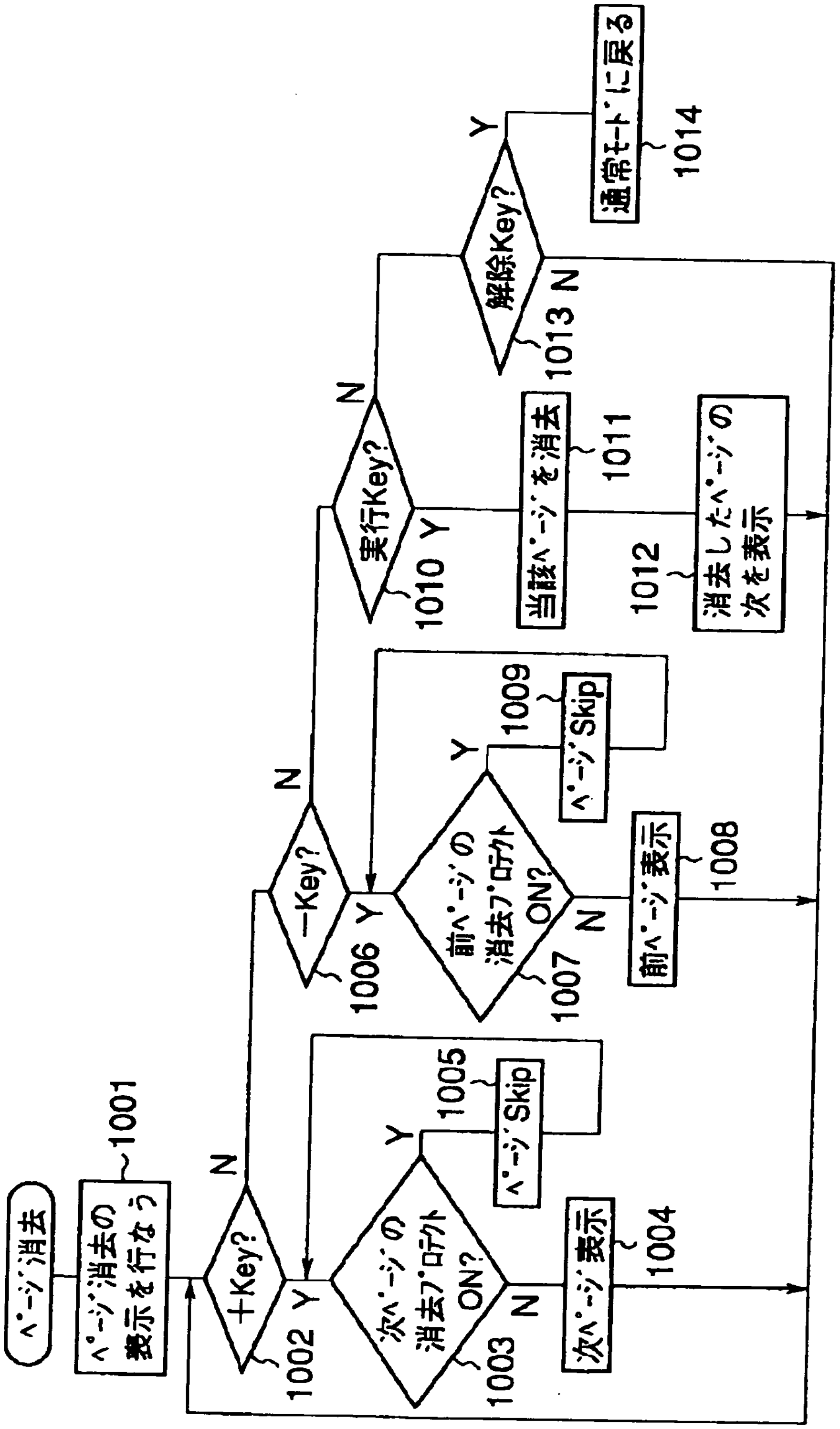
(a)

(b)

[Drawing 13]


(a)
消去ﾌﾟﾛﾃｸﾄON
当該画像ﾒﾓﾘの消去ﾌﾟﾛﾃｸﾄ処理を行なう
801
802
付帯情報表示ON?
Y
N
804
803
ﾍﾟｰｼﾞ番号と"P"表示を行なう
ﾍﾟｰｼﾞ番号と"P"表示を行なう
1秒間待ち
805
ﾍﾟｰｼﾞ番号と"P"表示を消す
806
終了
(b)
消去ﾌﾟﾛﾃｸﾄOFF
当該画像ﾒﾓﾘの消去ﾌﾟﾛﾃｸﾄ処理を行なう
807
808
付帯情報表示ON?
Y
N
809
8091
ﾍﾟｰｼﾞ番号のみの表示を行なう
ﾍﾟｰｼﾞ番号のみの表示を行なう
1秒間待ち
810
ﾍﾟｰｼﾞ番号表示を消す
811
終了

[Drawing 15]


ページ消去
ページ消去の表示を行なう
1001
+Key?
1002
Y
N
次ページの消去プロテクトON?
1003
Y
N
ページSkip
1005
次ページ表示
1004
−Key?
1006
Y
N
前ページの消去プロテクトON?
1007
Y
N
ページSkip
1009
前ページ表示
1008
実行Key?
1010
Y
N
当該ページを消去
1011
消去したページの次を表示
1012
解除Key?
1013
Y
N
通常モードに戻る
1014

[Translation done.]